

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 1037-157PCT	FOR FURTHER ACTION <div style="float: right; font-size: small;">see Form PCT/ISA/220 as well as, where applicable, item 5 below</div>	
International application No. PCT/CA2006/000670	International filing date (<i>day/month/year</i>) 28 April 2006 (28-04-2006)	(Earliest) Priority date (<i>day/month/year</i>) 20 May 2005 (20-05-2005)
Applicant TIR SYSTEMS LTD. ET AL		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 6 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of:

☒ the international application in the language in which it was filed

☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I

2. ☐ **Certain claims were found unsearchable** (see Box No. II)

3. ☒ **Unity of invention is lacking** (see Box No. III)

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant

☐ the text has been established by this Authority to read as follows :

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 1

☒ as suggested by the applicant

☐ as selected by this Authority, because the applicant failed to suggest a figure

☐ as selected by this Authority, because this figure better characterizes the invention

b. ☐ none of the figures is to be published with the abstract

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of the first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons :

1. ☐ Claim Nos. :
because they relate to subject matter not required to be searched by this Authority, namely :

2. ☐ Claim Nos. :
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically :

3. ☐ Claim Nos. :
because they are dependant claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows :

Claims 1 and 2 are directed to a cove illumination module comprising a heat sink.

Claim 3 is directed to a cove illumination module comprising a metal core printed circuit board or a FR4 board.

Claims 4, 5, 6 and 7 are directed to a cove illumination module comprising a linear reflector having a uniform longitudinal cross-sectional shape having one or more walls, the reflector configured to generate an asymmetric beam of light or symmetric beam of light.

Claim 8 is directed to a cove illumination module comprising a housing manufactured from metal.

See continuation of Box III on page 6.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claim Nos. :
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claim Nos. :

Remark on Protest ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CA2006/000670

A. CLASSIFICATION OF SUBJECT MATTER
 IPC: **F21S 4/00** (2006.01) , **G09F 13/00** (2006.01) , **H01L 51/50** (2006.01)
 According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 IPC: **F21S 4/00** (2006.01) , **G09F 13/00** (2006.01) , **H01L 51/50** (2006.01), F21S*

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic database(s) consulted during the international search (name of database(s) and, where practicable, search terms used)
 Canadian Patents Database; Delphion; Espacenet Keywords: LED, light emitting diode, metal core printed circuit board, FR4 board, reflector, lens, housing, module, cove, heat sink, strip, modular, sign

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X, P	WO 2005/073627 (MATHESON) (Prior art by applicant) August 11, 2005 (11-08-2005) the whole document	1 to 8 and 10 to 12
X	US 6,882,111 (KAN et al.) (Prior art by applicant) April 19, 2005 (19-04-2005) the whole document	1, 4, 7, 8, 9, 10, 11 and 13
Y		2, 3, 5, 6, 12 and 14
Y	US 6,700,502 (PEDERSON) March 2, 2004 the whole document	4 to 7
Y	CA 2,342,267 (HOCHSTEIN) September 30, 2001 (30-09-2001) the whole document	2

☒ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents :	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

04 August 2006 (04-08-2006)

Date of mailing of the international search report

29 August 2006 (29-08-2006)

Name and mailing address of the ISA/CA
 Canadian Intellectual Property Office
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/CA2006/000670

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2002/0126478 (CORNELISSEN et al.) September 12, 2002 (12-09-2002) the whole document	3
Y	US 6,866,394 (HUTCHINS et al.) March 15, 2005 (15-03-2005) the whole document	12, 13, 14

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CA2006/000670

Patent Document Cited in Search Report	Publication Date	Patent Family Member(s)	Publication Date
WO 2005/073627	11-08-2005	US2005213328 A1	29-09-2005
US 6,882,111	19-04-2005	NONE	
US 6,700,502	02-03-2004	US6705745 B1 US6789930 B2 US7038593 B2 US7080930 B2 US2002036908 A1 US2004052090 A1 US2004160334 A1 US2005259434 A1 WO0074972 A1 WO0074973 A1 WO0074974 A1 WO0074975 A1	16-03-2004 14-09-2004 02-05-2006 25-07-2006 28-03-2002 18-03-2004 19-08-2004 24-11-2005 14-12-2000 14-12-2000 14-12-2000 14-12-2000
CA 2,342,267	30-09-2001	EP1139439 A1 US6517218 B2	04-10-2001 11-02-2003
US 2002/126478	12-09-2002	CN1213335C EP1373794 A1 JP2004519816T T TW580549 B US6840646 B2 WO02066892 A1	03-08-2005 02-01-2004 02-07-2004 21-03-2004 11-01-2005 29-08-2002
US6,866,394	15-03-2005	AU7764900 A CA2386224 A1 EP1222425 A1 JP2003511817T T MXPA02003392 A US2005040970 A1 WO0125681 A1 WO03034369 A2	10-05-2001 12-04-2001 17-07-2002 25-03-2003 10-09-2004 24-02-2005 12-04-2001 24-04-2003

Continuation of Box III:

Claim 9 is directed to a cove illumination module wherein the external housing unit and one or more optical elements are integrally formed.

Claim 10 is directed to a cove illumination module wherein one or more optical elements are configured to generate an asymmetric beam of light or a symmetric beam of light.

Claims 11 and 13 are directed to a cove illumination module wherein one or more of the optical elements are configured as a lens, the lens being a lenticular lens, toroidal shaped lens, Fresnel lens, or pillow lens.

Claims 13 and 14 are directed to a cove illumination module comprising two or more cove illumination modules operatively connected by an environmentally sealable electrical connection.

As none of the features found in independent claim 1 are novel, the claims lack unity of invention a posteriori.